


Public Works Department Engineering Division Policy	Number: ENGR-DEV(STM)-2011-02
	Date: April 25, 2011 Issue/Revision: Revision 1.0
Subject: Use of Pumping Systems for Conveyance of Stormwater on Private Property	Approved: 

Pump systems (lift stations) may be used for conveyance of stormwater flows from a project site, if no other feasible option exists. Pump systems shall meet the following minimum requirements:

1. The pump system must be located on private property and be privately owned, operated, and maintained.
2. The pump system shall be used to convey water from one location or elevation to another within the project site, prior to gravity discharge to the public storm drainage system. No force main system shall be directly connected to the City's storm conveyance. All force mains from pump systems shall connect to a catch basin on private property and gravity flow to the City's storm system to an approved connection point. All force mains shall have backflow prevention valves.
3. The pump system shall be designed by a licensed Civil Engineer.
4. The Engineer shall submit to the City for approval design information that includes the pump curve and the discharge system curve such that the City Engineer or designee can verify the maximum discharge rate at the operating point of the system.
5. If a "packaged" system is proposed made from fiberglass or polyethylene or other material that is less dense than concrete, a concrete anti-flotation base shall be poured and encapsulate an anti-flotation flange/plate attached to the pump vessel to prevent buoyant forces from displacing the system while empty. Calculations shall assume that the groundwater table is at grade with the pump station lid and include a 20 percent safety factor. The Engineer or designee shall submit these buoyancy calculations for review and approval by the City Engineer or designee.
6. Additional requirements to protect against damage resulting from a power outage or equipment malfunction will vary based on the site's classification. All projects that use pump systems for stormwater must provide an overflow path as described in item 7 below.

In addition, all Category 2 Small Site projects and all Large Site projects must provide¹:

- A dual pump (alternating) pump system with an external alarm and
 - Backup power able to power at least one pump
7. Overflow path(s) must be designed for the gravity-flow components of the drainage system to and from the pump system so that a power outage or other pump failure does not result in:
 - Flooding of a building or emergency access
 - Erosion or downstream sedimentation
 - Slope failure.

An overflow/flooding hold-harmless agreement may be required at the discretion of the City Engineer or designee.

8. The design, construction, operation, and maintenance of the pump system shall not violate any City ordinances or codes and shall not be used to circumvent any other stormwater code requirement. For example, if stormwater flow control is applicable to the site, the allowable discharge rates from the pump system must be less than or equal to the same for a code-compliant gravity detention system or other approved best management practice. This may require a detention system upstream of the pump system.

¹ These additional requirements are not required on sites where the pump system serves less than 5,000 square feet of impervious area (i.e., pump only serves part of the site).